

Description of a new *Muricopsis* species (Gastropoda: Muricidae: Muricopsinae) From the Panamic Province

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ABSTRACT. *Muricopsis* (*M.*) *mcleani* n.sp. is described from the Gulf of California, Mexico, and compared with: *Muricopsis* (*M.*) *pauxillus* (A. Adams, 1854), and *Muricopsis* (*M.*) *tulensis* Radwin & D'Attilio, 1976.

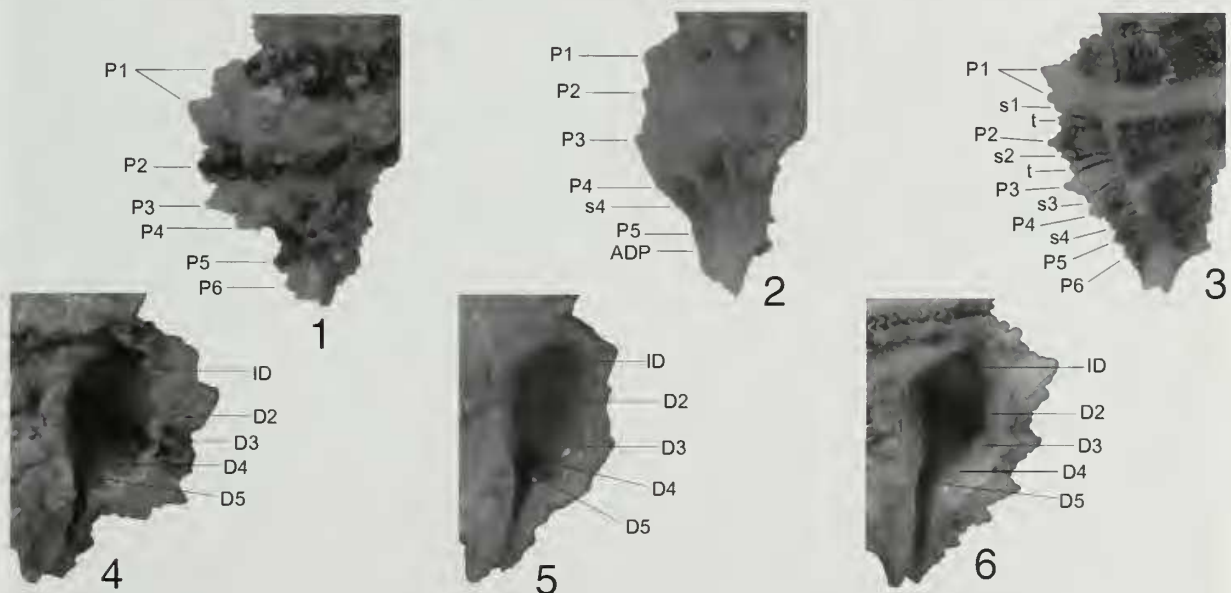
INTRODUCTION

Recent literature containing distribution data for *Muricopsis* (*M.*) *pauxillus* has been inconsistent. Based on an analysis of this literature and specimen lots from both the LACM collection and self-collected specimens, it appears the specimen said to be from the Gulf of California has been misidentified. Radwin & D'Attilio (1970: 351) list four eastern Pacific species assigned to *Muricopsis* s.s. Skoglund (2002: 108) later assigns three additional species to the genus. Studies by Houart (2000:468, 2005: 119) and Houart & Gori, (2008: 149) define characteristics of the

genus in detail. Without a thorough examination of shell morphology, the northern and southern lots could quite easily be overlooked and identified as the same species, which has been the case for the last forty years.

Abbreviations

BMNH: Natural History Museum, London, U.K.
LACM: Natural History Museum of Los Angeles County, California, U.S.A.
SW: collection of the author



Figures 1-6. *Muricopsis* species. Spiral sculpture and apertural denticles.

1-2. *Muricopsis mcleani* nomen novum (holotype LACM). **3-4.** *Muricopsis tulensis* Radwin & D'Attilio, 1976 (Baja California, Mexico, LACM). **5-6.** *Muricopsis pauxillus* (A. Adams, 1854) (Mexico, SW).

Teleoconch Whorls	
P	Primary cord
s	secondary cord
t	tertiary cord
P1	Shoulder cord
P2-P6	Primary cords of the convex part of the teleoconch whorl
s1-s4	secondary cords of the convex part of the teleoconch whorl
example: s1 = secondary cord between P1 and P2; s2 = secondary cord between P2 and P3, etc.	
ADP	adapical primary cord on the siphonal canal
Aperture	
ID	Infrasutural denticle
D1-D5	Abapical denticle

Table 1. Terminology used to describe the spiral cords and the internal denticles of the outer lip (based on Merle 1999, 2001, 2005 and Merle & Houart, 2003) (Figs. 1-6).

SYSTEMATICS

The classification of the genus *Muricopsis* s.s. follows that of Houart (2006: 50).

Family **Muricidae** Rafinesque, 1815

Subfamily **Muricopsinae** Radwin & D'Attilio, 1971

Genus ***Muricopsis*** Bucquoy & Dautzenberg, 1882

Subgenus ***Muricopsis*** s.s.

Type species by original designation: *Murex blainvillei* Pauraud, 1926 (= *Murex cristatus* Brocchi, 1814).

***Muricopsis (Muricopsis) pauxillus* (A. Adams, 1854)**
Figs. 5-6, 15-17

Murex pauxillus A. Adams, 1854: 71; –Tryon, 1880: 109, pl. 29, fig. 264 [specimen]; –Radwin & D'Attilio, 1970: 351; –Trew, 1992: 46.

Muricidea pauxillus–Carpenter, 1857: 528.–Brann, 1966: 84, pl. 59.

Muricopsis pauxillus–Keen, 1958: 362, fig. 368; –DuShane & Poorman, 1967: 429; –Keen, 1971: 525, fig. 1006; –Fair, 1976: 65, pl. 17, fig. 224, 224a; –Radwin & D'Attilio, 1976: 169 pl.27, fig. 7-8; –Draper, 1980: 15; –Mulliner, 1996: 65; –Hertz & Myers, 2000: 22 fig. 1.

Muricopsis (Muricopsis) pauxillus–Skoglund, 2002: 108.

Type Material. Three syntypes, BMNH 1966490.

Distribution. Mazatlan, Sinoloa, Mexico, to Manzanillo, Colima, with records from Puerto Escondido, Guerrero, and Central America, both of which need confirmation.

Diagnosis. *Muricopsis (M.) pauxillus* is characterized by its large size, pointed shoulder spines and long, sharp varices.

Figures 7-17

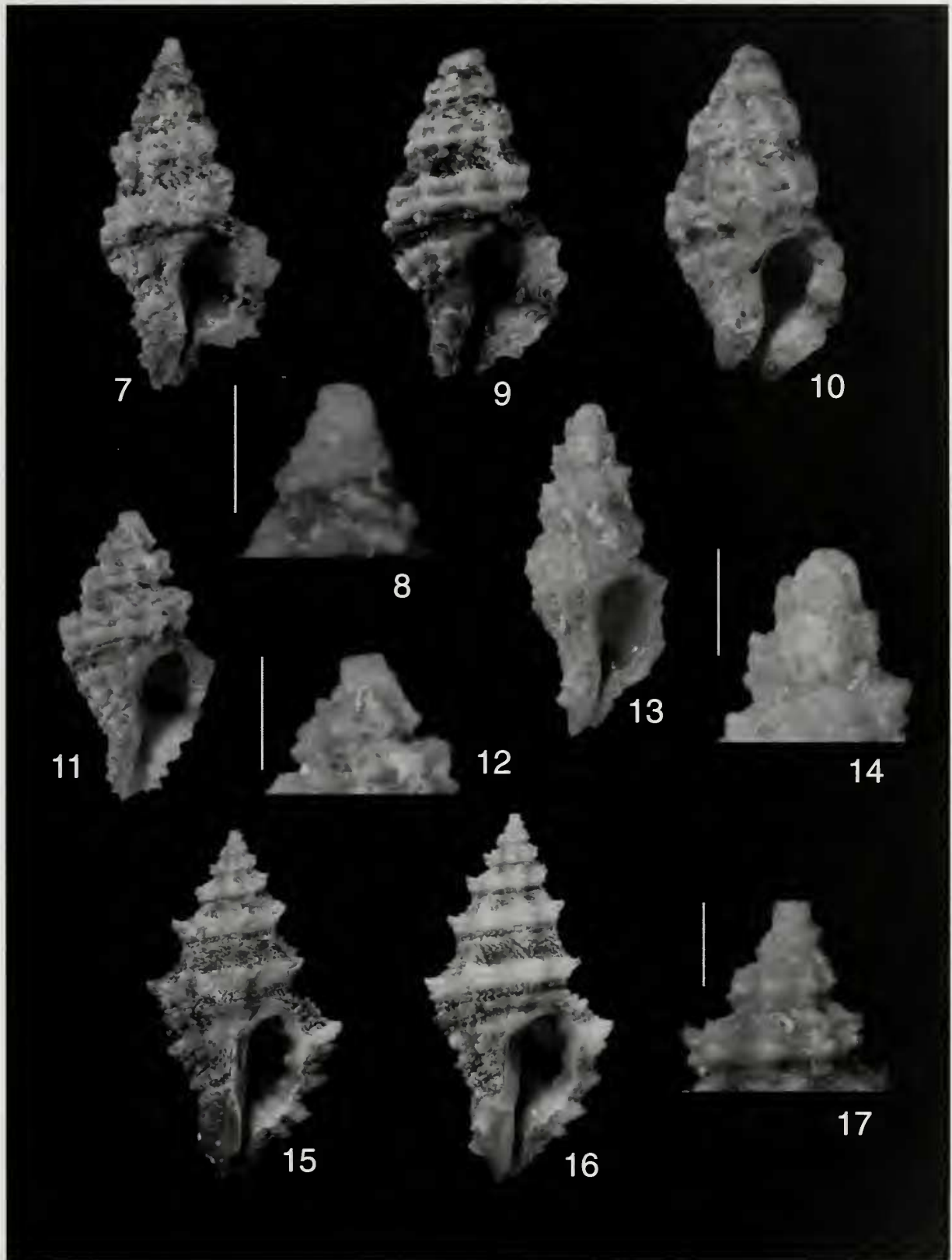
7-12. *Muricopsis (Muricopsis) mcleani* n.sp.

7-8. Holotype, San Gabriel Bay, Espiritu Santo Island, Gulf of California, Mexico, intertidal, (LACM-3097), [7. height 9.9 mm; 8. Worn protoconch, scale bar 1 mm]; 9. Paratype, San Carlos, Sonora, Mexico, crabbed under rock, intertidal, Wiedrick coll., height 8.3 mm; 10. Gordon Rocks, Santa Cruz Is., Galapagos Is., R/V in 82 m, (LACM 34-192), height 6.2mm; 11-12. juvenile specimen from Ensenada Carrizal, Guaymas, Sonora, Mexico, intertidal to 10 m, (LACM 60-32), [11. height 5.7 mm; 12. Protoconch, scale bar 1 mm].

13-14. *M. (M.) tulensis* Radwin & D'Attilio, 1976. Type locality, Rancho El Tule, Baja California Sur, Mexico (LACM 66-15), [13. height 6.7 mm; 14. Protoconch, scale bar 1 mm].

15. *M. (M.) pauxillus* (A. Adams, 1854). Nayarit, Mexico, intertidal, Wiedrick coll., height 14.1 mm.

16-17. *M. (M.) pauxillus*. Mazatlan, Sinoloa, Mexico, Wiedrick coll. [16. height 14.7mm; 17. Protoconch, scale bar 1mm].



Discussion. The original description (in Latin) of *Muricopsis (M.) pauxillus* (A. Adams, 1854: 71), from the Gulf of California (Trew, 1992: 46), was unillustrated and no measurements were provided. Carpenter (1857: 528) recognized the species from Mazatlan, Mexico. It was then illustrated by Tryon (1880: 109). Carpenter's drawing was later illustrated by Brann (1966: 84). Specimens from Guaymas, Sonora, Mexico first extended the distribution north into the Gulf of California (DuShane & Poorman, 1967: 429). The following decade, Keen (1971: 525), Fair (1976: 65) and Radwin & D'Attilio (1976: 170) neglected the northern record, and reported the distribution restricted to the southern region of the Gulf of California. Additionally, Radwin & D'Attilio, (1976: 170) declared the range to extend south into Central America. Twenty years later, a range extension was again published, listing a record of this species from the northern Gulf of California. Myers (2000: 30) illustrated a specimen erroneously cited as *M. pauxillus* from the northern region of the Gulf of California. A variant form was illustrated in Hertz & Myers (2000: 22) from the southern Gulf of California. Shell morphology of *Muricopsis (M.) pauxillus* sampled from 25 lots, displays the characteristics of the holotype. Most specimen average a height of about 14 mm, the largest record measures 16.2 mm (Draper, 1980: 15).

***Muricopsis (Muricopsis) tulensis*
Radwin & D'Attilio, 1976**

Figs. 3-4, 13-14

Muricopsis tulensis Radwin & D'Attilio, 1976: 233, fig. 184, 185;—Myers, 2000: 37, fig. 1.

Muricopsis (Muricopsis) tulensis—Skoglund, 2002: 108.

Type locality. Rancho el Tule, Baja California Sur, Mexico (20° 55' N, 109° 50' W)

Distribution. southeastern tip of Baja California Sur, Mexico; Isla Danzante, Gulf of California, (Mulliner, 1996: 65) which needs confirmation.

Diagnosis. *Muricopsis (M.) tulensis* is characterized by its small size, backward rolled varices and convex protoconch.

***Muricopsis (Muricopsis) ucleani* n.sp.**
Figs. 1-2, 7-12

“*Muricopsis pauxillus*”—Myers, 2000: 38, fig. 2.

Type material. Holotype, LACM (3097) height 9.9 mm, width 5.1 mm; 4 paratypes SW.

Type locality. San Gabriel Bay, Espiritu Santo Island, Gulf of California, Mexico (24° 29' N, 110° 27' W)

Material examined. Holotype LACM-3097 (Fig. 1-2) intertidal; 1 specimen intertidal, LACM 73-6 (27° 58' N, 111° 07' W); 3 specimens intertidal to 10 m, LACM 60-32 (27° 52.5' N, 110° 54.7' W); 1 specimen, R/V Veleró III in 82 m, LACM 34-192 (0° 32.8' S, 90° 09.4' W); 4 paratypes intertidal, SW coll. (27° 58' N, 111° 07' W).

Distribution. San Carlos, Sonora, Mexico, southwest to Mulege, Baja California Sur and south to Espiritu Santo Island, Gulf of California; Isla Santa Cruz, Galapagos Islands, intertidal to 82 m.

Diagnosis. *Muricopsis (M.) ucleani* n. sp. is characterized by its medium size, tabulate protoconch and distinct spiral cords.

Description. Shell tall, somewhat rhomboid shaped with convex whorls, small sized for the genus, mature specimen attaining a height under 10 mm. Color tan with 2 narrow dark bands, one at periphery, the other below, separated by one dark brown spiral cord. Protoconch tabulate, quickly enveloped by blade-like varices of first teleoconch whorl. Teleoconch whorls slightly rounded, up to 6 whorls. Suture impressed, sculptured with fine microscopic foliations crossed by 8 robust varices per whorl. Axial ribs distinctly strong on penultimate and final whorls, ribs extend from suture and continue down the base eventually becoming 5 tight rows that form into the siphonal fasciole. Teleoconch whorls bear two major spiral cords on the peripheral margin and a minor dark brown cord above the suture, final whorl bears 6 major spiral cords (P1-P6) with microscopic foliations (Fig. 3); overall appearance is cancellate in worn specimens (Fig. 9). Profile of last body whorl convex, base of shell rounded at periphery, concave at top of siphonal fasciole, fasciole straight and only slightly recurved, rounded near anterior end. Leading edge of final varice with fine crispate surface in fimbriate margin expanding across entire flaring outer lip. Aperture ovate, 5 faint denticles on outer lip (D1-D5), lower portion of parietal wall smooth.

Discussion. Comparisons are made to *Muricopsis pauxillus*, *M. tulensis* and *M. ucleani* n.sp. All three species produce rather thick, robust shells ornamented with differing shell sculptures. Characteristics of all three protoconchs are distinctly different in each. *M. tulensis* has a convex protoconch (Fig. 14), whereas both *M. ucleani* n. sp. and *M. pauxillus* have tabulate protoconchs. Specimens of *M. pauxillus* have one and one-half protoconch whorls (Fig. 17), whereas *M. ucleani* lack the one-half carinate whorl and is quickly interrupted by sharp blade-like varices of first teleoconch whorl (Fig. 8, 12).

The teleoconch sculpture of all the species are dominated by strong axial ribs along the entire length of shell. *Muricopsis tulensis* bears five teleoconch whorls, first three whorls with faint upturned spines at

periphery. Ribs crossed by two or three strong spiral cords on all teleoconch whorls, except final, which bears four subtle spiral cords, obsolete as cords approach canal. Pseudoumbilicus high, meeting parietal wall well above base of aperture.

Muricopsis mcleani n.sp., with seven teleoconch whorls, has rounded varices, progressively projecting further outward as specimens mature. Teleoconch whorl sculptured with two vaulted cords on the periphery, one dark brown vaulted cord just above the suture. Final whorl with eight to ten vaulted cords, denser in siphonal fasciole region. Pseudoumbilicus low, meeting parietal wall at or below merging of

siphonal canal. Aperture ovate, smaller and more symmetrical than *M. tulensis*. Degrees of coloration variable.

Muricopsis pauxillus yields six teleoconch whorls, first whorl bulbous, with strong ribs crossed by two even nodes protruding at periphery, top node quickly progressing into a hollowed spine on shoulders of the remaining five whorls. Spiral sculpture of last whorl vaulted with strong P1-P6 cords. Previous three whorls also display vaulted sculpture with distinct P1 (split) spiral cords. Pseudoumbilicus high, similar to *M. tulensis*, meets parietal region above bottom of aperture, siphonal fasciole recurved.

	<i>M. pauxillus</i>	<i>M. mcleani</i>	<i>M. tulensis</i>
<i>Size</i>	12-16 mm	8-10 mm	under 8 mm
<i>Shell color</i>	Purple brown	Tan	White
<i>Banding color</i>	Two white bands; periphery, base of body.	Three dark brown bands; shoulder, below periphery, base of body.	Two chestnut brown bands; shoulder, base of body.
<i>Protoconch</i>	1 ½ whorls; 1 st tabulate, other ½ carinate	One tabulate whorl	1 ½ convex whorls
<i>Varices</i>	6 or 7 per whorl, sharp with a hollowed spine on shoulder	9 per whorl, sharp blade-like	8 per whorl, slightly backward rolled
<i>Aperture</i>	Ovate, sinus defined, 5 denticles	Ovate-round, 5 denticles	Ovate, 4 or 5 denticles

Etymology. Named for Emeritus Curator of Malacology, LACM, James Mclean, who has richly contributed to the field of Malacology.

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